



Generations, Waves, and Epochs

MODES OF WARFARE AND THE RPMA*

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THE PUBLICATION of the article written by Col Owen E. Jensen, USAF, entitled “Information Warfare: Principles of Third-Wave War” in the Winter 1994 issue of *Airpower Journal* represents a significant event. Tofflerian concepts, which have gained so much credence with the Army, are now beginning to openly influence Air Force dialogue on information-based future war. In that article, Colonel Jensen states that “the Tofflers provide probably the clearest and most accurate explanation of how this new type of warfare evolved.”¹

Before the Air Force openly embraces the Tofflerian trinity of agrarian, industrial, and informational war forms, some well-informed reflection should first take place. This reflection requires an understanding of the three dominant theories of future war currently debated in the military journals—fourth-generation warfare, third-wave war, and fourth-epoch war.²

Specifically, these modes of warfare and perspectives on the revolution in political and military affairs (RPMA) need to be analyzed because these assumptions provide the foundations behind each theory’s projections of future warfare.³ Instances where the methodology behind such assumptions falls short should thus be a cause for concern because if a theory cannot accurately explain past modes of warfare and military revolutions, it will surely be unable to account for future ones.

Only after such analysis is undertaken can Air Force officers decide what attributes of the Tofflerian framework, and potentially those of the competing frameworks, should be utilized in the creation of post-Clausewitzian principles of future warfare.⁴ This article provides an overview and synopsis of each competing theory, discusses its impact and shortcomings, and offers a limited conceptual comparison so that such informed decisions can begin to be independently made.

*This essay was adapted from a lecture given in the National Security Studies MA program at California State University, San Bernardino, in the spring of 1995. The contributions of Dr Mark T. Clark, Dr Steven Metz, and Capt Scott Smith, USAF, toward this essay are acknowledged. All errors are the sole responsibility of the author.

Fourth-Generation Warfare (1989)

This theory of warfare was developed by William S. Lind and four officers from the Army and the US Marine Corps (USMC).⁵ Mr Lind, who has served as a legislative aide for two senators, is the director of a conservative think tank and is an authority on maneuver warfare. Fourth-generation warfare is primarily a tactical-level theory, which at times straddles the operational level, set in the modern era from about the Treaty of Westphalia in 1648 to the present (table 1). It was published concurrently in the October 1989 issue of *Marine Corps Gazette and Military Review*.

This theory is based on a qualitative dialectic stemming from the clash of thesis and antithesis and has not been satisfactorily developed. The introduction of either new technology or ideas is viewed as the basis for each succeeding generation of warfare. Military revolutions in this context are viewed as tactical, possibly operational, innovations in warfare that yield a decisive advantage to whoever adapts to them first. For this reason, the current military revolution would be considered comparable in scope to the one that took place back in the 1920s and 1930s.

In response to articles by this author and Lt Col Thomas X. Hammes, Lind and two Marine colleagues did a reappraisal of this theory in the December 1994 *Marine Corps Gazette* in which their theoretical perspectives went basically unchanged.⁶ Ideas, not technology, would dominate future warfare. These authors only took the further step of voicing strong opinions concerning the potential fragmentation of American society due to the abandonment of Judeo-Christian culture.

First-Generation Warfare (Technology)

This form of warfare, which developed in about 1648, was based on the smoothbore musket and tactics cen-

tering on the line and column. This generation of warfare was linear and saw the fielding of small professional armies that relied upon rigid drill to maximize firepower. Interestingly, the French revolutionary armies with their low training levels and massive manpower levees were included in this generation. These armies represented the antithesis of the Prussian military system that had earlier dominated this mode of warfare.

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Second-Generation Warfare (Technology)

The second generation "was a response to the rifled musket, breechloaders, barbed wire, the machine gun and indirect fire."⁷ Tactics remained essentially linear even though fire and movement now became common as troops dispersed laterally. Massed firepower replaced massed manpower as indirect fire began to dominate the battlefield. This generation saw the formal recognition and adoption of the operational art devised by the Prussians.

Third-Generation Warfare (Ideas)

Third-generation warfare was based on ideas rather than technology. German infiltration tactics devised in World War I were truly nonlinear, which resulted in maneuver instead of attrition being relied upon to destroy an opposing force. These concepts were then applied to the development of the tank and abstracted to the operational level to form the basis of World War II blitzkrieg campaigns, which were time-centered rather than place-centered.

Table 1
Fourth-Generation Warfare

GENERATION	PERIOD	BASIS
First	1648 to present	Technology
Second	1815 to present	Technology
Third	1918 to present	Ideas
Fourth	Emerging	Technology
Fourth	Emerging	Ideas

Fourth-Generation Warfare (Technology)

Originally proposed in a 1989 article by Lind and others as one of the two alternative forms of future warfare which might develop, this warfare path was abandoned by these authors for their idea-based path once this theory became linked with Dr Martin van Creveld's 1991 book *The Transformation of War*. This is unfortunate because the potential offered by directed-energy weaponry, robotics, and media-based operations envisioned in the technology warfare path was generally accurate and has been addressed by both of the other theories embodied in this essay.

Fourth-Generation Warfare (Ideas)

The emerging fourth generation proposed by Lind and others is now envisioned to be firmly based on ideas, specifically non-Western ones. Terrorism, which bypasses traditional military forces and directly strikes at a nation's civilian populations, is viewed as a major component of this mode of warfare. The transnational or nonnational basis of terrorism makes it extremely difficult to attack. Ultimately, this form of warfare is nontrinitarian in character and, for that reason, is post-Clausewitzian.

Impact. While simultaneously published in both a Marine Corps and an Army journal, this theory has gone on to have a greater impact on the Marine Corps than the other services. This impact has apparently developed because of the Marine Corps's greater interest in low-intensity conflict, insurgency, and terrorism upon which the theory is focused (i.e., the other form of future war that is developing). Because fourth-generation theory focuses more on the subnational and non-Western threat to our government than on actually providing any suggestions on what should be done to counter it, its influence on the Marine Corps has remained limited. This theory has had no discernible influence on Air Force, Navy, or Army thinking.

Criticisms. Strong criticism of this theory first appeared in an Autumn 1993 *Parameters* article written by Maj Kenneth McKenzie, USMC.⁸ His well-crafted and persuasive arguments were directed at the theory's flawed methodological and historical underpinnings. Arguments against its relevancy, however, were less successful and were met by strong commentary delivered by van Creveld in the following issue.⁹

I directed criticisms against the methodological and historical attributes of this theory in a September 1994 *Marine Corps Gazette* article. Of specific concern was that the decoupling of technology and ideas results in an inaccurate mode of warfare modeling. Still, while it was suggested that the far larger and more encompassing fourth-epoch paradigm better explained the "military revolution" of our changing modern world, the theory of Lind and the others was acknowledged as visionary.

Criticism and support in a number of March 1995 *Marine Corps Gazette* articles have now focused on the five-year reappraisal of fourth-generation warfare.¹⁰ That reappraisal has generated a controversial debate over the basic utility of this theory and where American society and the Marine Corps are now heading.

Third-Wave War (1993)

An early published reference to third-wave war can be dated to a 1991 *Los Angeles Times* article written by Alvin and Heidi Toffler.¹¹ It was not until the publication of their 1993 book, *War and Anti-War: Survival at the Dawn of the 21st Century*, that the third-wave war theory became widely known.¹² Alvin Toffler is one of the best-known futurists of the twentieth century. He has served as a Washington correspondent, as an associate editor of *Fortune*, as a visiting scholar, and as a consultant to major corporations. Along with his wife, Heidi, he has written numerous books and articles that have popularized their ideas.

War and Anti-War is a continuation of these earlier writings and the first attempt by these authors to

Table 2
Tofflerian Waves

WAVE	WHEN DEVELOPED	MODE OF PRODUCTION
First	8,000 B.C.	Agricultural
Second	C. A.D. 1690	Industrial
Third	Current	Knowledge

Source: Robert J. Bunker, "The Tofflerian Paradox," *Military Review*, May-June 1995, 100.

analyze military matters. War is viewed as an extension of how wealth is made in a society. For this reason, it is subordinate to society's prevailing mode of production. Much like Marxist materialism without the accompanying normative baggage, this theory views humanity as developing three waves (e.g., "super-civilizations") over the course of its history (table 2).

Military revolutions in this theory are viewed as monumental events that mark the development of new war forms:

A military revolution, in the fullest sense, occurs only when a new civilization arises to challenge the old, when an entire society transforms itself, forcing its armed services to change at every level simultaneously—from technology and culture to organization, tactics, training, doctrine, and logistics. When this happens, the relationship of the military to the economy and society is transformed, and the balance of power on earth is shattered.¹³

According to this perception, the military revolution we are now witnessing is viewed to be as significant as that of the French Revolution of the late eighteenth century.

First-Wave War (Agricultural)

This war form is based on poorly organized, poorly equipped, and poorly led armies that engage in seasonal fighting. Orders are verbal, pay is irregular and usually in-kind, and the nature of killing is face-to-face. First-wave civilizations engaged in this form of war range from classical Greece and feudal Europe to ancient China. The Roman legions at their peak were identified as an exception to this concept.

Second-Wave War (Industrial)

The second-wave war form is viewed as representative of industrial civilization. Mass armies using standardized weaponry produced on assembly lines engage in unlimited warfare based on attrition. Officers are now educated in military academies and orders are delivered in writing. The machine gun and mechanized forces have caused the development of entirely new tactics. War shifted from a struggle between rulers to one between peoples embodied by nation-states. This war form reached its apex of destructive potential with the development of huge nuclear arsenals stockpiled by the superpowers.

Third-Wave War (Knowledge)

This emerging war form is based on a new economy that is information-driven.¹⁴ This is the most extensively written about war form envisioned by the Tofflers. Precision guided munitions, robots, nonlethal technology, directed-energy weaponry, and computer viruses are all viewed as attributes of third-wave war. Demassification, niche capabilities, and cyberwar are also discussed, and, as a result, have served to better inform military officers about advanced technology developments.

Along with the presentation of these intriguing and exotic technologies is a multitude of questions concerning their potential military impact and feasibility. The implications of such technologies on military ethics and societal ideals are, unfortunately, too often ignored. Still, the envisioned third-wave war form is post-Clausewitzian in nature and correct in many of its technical implications.

Impact. Third-wave war theory, with its futuristic and high-technology orientation, has had a significant impact on the thinking of senior Army officials, specifically Gen Gordon R. Sullivan, the former Army chief of staff. As a result, some of its ideas are directly tied to the creation of the "Information Age Army" envisioned in Training and Doctrine Command (TRADOC) Pamphlet 525-5, *Force XXI Operations*. Further, its waves of war have appeared in at least one official Army publication, and the Tofflers are constantly quoted by Army officers in military symposia. Its institutional influence on the Army may be transitory, however, now that General Sullivan has retired. Because the Marine Corps and Navy are now only beginning to enter the advanced technology aspect of the RPMA debate, this concept of war has had little measurable impact on either service. As mentioned in the introduction, third-wave war ideas are now finding their way into the Air Force debate, which is currently centered on the informational aspects of future war.

Criticisms. Criticism of Tofflerian theory is slowly mounting as its influence on the Army's senior leadership has now become apparent. While a number of its forward-looking aspects are viewed as significant contributions toward future war-fighting thought, its waves of war—as Col Richard Swain (USA, Retired), Dr Steven Metz, and I have shown—have no basis in historical reality.¹⁵

Dr Metz, a former professor at the Air War College, while expressing concerns over the popularity of third-wave war theory with the military, went on to quietly downplay the theory's significance in the Winter 1994–95 edition of *Parameters*. In a May–June 1995 *Military Review* essay, I launched a far more direct assault on its utility by specifically arguing that its envisioned war forms are severely flawed and, as a result,

may be more of a burden than a benefit to the Army's RPMA debate.

The Tofflers are correct that a monumental transformation is embracing our society. Because they are first and foremost futurists, however, they have unfortunately had to rationalize this transformation by interpreting history so that it would conform to their abstract theory of super civilizations.

Fourth-EPOCH War (1994)

This theory of war was developed in 1987 by Dr T. Lindsay Moore and this author in a research seminar on classical warfare at the Claremont Graduate School. We are actively teaching at the graduate level in the field of national security studies and rely primarily on historical analysis in our research endeavors. The concept of fourth-epoch war is based on a political science theory that examines the development of Western civilization over the last 2,500 years. Societal energy foundation change, which directly impacts polity forms and their economic and military systems, drives the assumptions behind this theory. The theory itself is concerned with the rise and fall of political

communities, cyclical eras of mercenary dominance, and evolving modes of Western warfare. Because of the immense national security concerns this theory raises, it has purposefully been developed over the last nine years for applied use by US military and governmental policymakers.

While broad in scope, many components of fourth-epoch war have many components that are still unpublished. Documents pertaining to this theory have existed since 1989, with part of the theory being first put forth in a September 1994 *Marine Corps Gazette* article.¹⁶ To date, only the land warfare attributes of this still-evolving theory have been published.

This theory divides Western civilization into four energy-based epochs (table 3). Each epoch is composed of one or more energy sequences, each of which expresses its own unique modes of warfare based on the experimental and institutionalized exploitation of a given form of energy (e.g., human, animal, machine, engine, postengine). Military systems are viewed as a synthesis of tech-

Table 3
Energy and War in Western Civilization

EPOCH	ENERGY	WARFARE
Classical	Experimental Human	Hellenic
Classical	Institutionalized Human	Roman
Medieval	External Threat	Raider
Medieval	Experimental Animal	Vassal
Medieval	Institutionalized Animal	Feudal
Modern	Experimental Machine	Dynastic
Modern	Institutionalized Machine	Absolutist
Modern	Experimental Engine	Corporate
Modern	Institutionalized Engine	Modern
Post-Modern	External Threat	Non-Western*
Post-Modern	Experimental Post-Engine	Advanced Technology

*Formerly Terrorist/Low-Intensity Conflict

Source: Robert J. Bunker, "The Transition to Fourth Epoch War," *Marine Corps Gazette*, September 1994, 22.

nology and ideas that qualitatively differ between modes of warfare.

Military revolutions in this context are viewed as the attainment of a new energy threshold by Western civilization. *Intraepochal* military revolutions (i.e., within an energy paradigm) are viewed as significantly less disruptive phenomena, while *intereepochal* military revolutions (i.e., between energy paradigms) are viewed as massive civilization-changing events.

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Based on the historical trends isolated in this theory, the current RPMA represents an interepochal military revolution that will place the survival of the current dominant polity form, the nation-state, in considerable doubt and, as a result, will ultimately give rise to a postmodern form of political community. This military revolution, now only in its early stages, is viewed as being equal in magnitude to that of the European Renaissance.

First-EPOCH War (Human Energy)

First-epoch war existed within the classical world and was based on the exploitation of human forms of energy. The two modes of warfare that developed were Hellenic warfare, which was based on the phalanx, and Roman warfare, which was based on the legion. The economy during this entire era was based on slave-holding, the city-state was the basis of the political community, and the dominant ideological paradigm was founded on virtue (i.e., the relationships and differences between masters and slaves).

Second-EPOCH War (Animal Energy)

War in the second epoch took place within the Medieval world. This epoch contains three modes of warfare and is based on the exploitation of animal forms of energy. The raiders on the borders of Europe introduced mass cavalry-based warfare, which resulted in the fall of Rome and a period of barbarism in the West. The successor states to the Western half of this great empire responded by means of the development of indigenously based cavalry forces. Under the later feudal monarchies, these forces evolved into knights. The economy during this civilization epoch was based on fief-holding, the feudal state became the dominant pol-

ity form, and ideology rested on Divine Providence under the vestiges of the Church.

Third-EPOCH War (Mechanical Energy)

The modern, or third, epoch of war exists in a mechanical-based energy paradigm. This paradigm contains two energy sequences of machine- and engine-based energy, respectively. The first energy sequence, based on machine energy, saw the rise of mercenary armies during the dynastic era and their eventual institutionalization during the Age of Absolutism. Mercantilism represented the dominant mode of production, while dynastic states represented the major political form. The second energy sequence, based on engine energy, witnessed the rise of corporate warfare ushered in by Napoleonic France in its early stage and the development of the German concept of blitzkrieg warfare in its later and more modern institutionalized stage. Capitalism replaced mercantilism as the basis of the economy, and the nation-state replaced the dynastic state as the focal point of political organization.

Fourth-EPOCH War (Postmechanical Energy)

Fourth-epoch war represents the emerging warfare of the postmodern world. Two initial modes of warfare, based on postmechanical energy sources, are now developing. These are non-Western and advanced technology warfare, respectively. Non-Western warfare is based on the blending of terrorism and low-intensity conflict (LIC) as a challenge to the West's dominance in modern warfare. This is a mode of warfare that is equivalent in many respects to idea-based, fourth-generation warfare.¹⁷ Further, the increasing urbanization of the developing nations of the world is envisioned as negating much of the current dominance in modern war held by the West in its overseas operations. This dominance negation results because of the degradation of qualitative weapon superiority in the restrictive terrain of sprawling urban slums and the problem of distinguishing individual combatants from masses of innocent civilians.

Advanced technology warfare represents the rise of new military technologies such as precision guided weapons, information warfare, nonlethal weaponry, robotic war-fighting units, and directed-energy weaponry. Both Lind and the Tofflers recognize this rise of new technologies; however, only the Tofflers fully incorporate it into their projection of future war. While the Tofflers view the US Army in the Gulf War as having adapted Tofflerian doctrine to such advanced technology, I argue that it has been used in no more than a "strap-on" role and has not significantly altered

AirLand Battle doctrine based on modern war-fighting principles.

Impact. The impact of fourth-epoch war theory has been limited, although it has contributed toward the redirection of the theoretical debate in the Marine Corps away from maneuver warfare and toward both the advanced technology and non-Western warfare aspects of the RPMA.¹⁸ Directed toward the Army, this theory is now being used to help challenge the basic premises behind the operations-other-than-war (OOTW) concept, politico-military force implications of nonlethal technology, and fundamental concepts of battlespace.¹⁹ No impact on the Air Force or the Navy has been noted other than an initial query from Naval Doctrine Command concerning the naval applications of this theory.

Criticisms. No in-depth criticisms have had time to develop in reaction to this theory. Past commentary has mentioned its failure to address developments in air warfare, the lack of emphasis on advanced information technology, the nonreflection of the reality of battle, and the overreliance on a single-factor (i.e., energy) explanation of historical change. As more components of this theory are published, stronger criticisms such as those voiced by Lt Gen Victor H. Krulak (USMC, Retired) will undoubtedly be directed towards the theory.²⁰

... Third-wave war theory, however, may be critically flawed.

Conclusion

As I have stated, the Tofflers have promoted the most popularized theory of future war. Components of their third-wave war theory, however, may be critically flawed. For that reason, it should be compared to the other two theories highlighted in this essay before it is acknowledged as *the* authoritative work on this subject. To aid in this comparison, the modes of warfare qualitatively modeled in each framework have been placed side-by-side for analysis (table 4).

The subepochs contained within fourth-epoch war provide the most detailed modal delineations of Western history for the three theories presented in this essay. The reason for this is that this theory was first and foremost a model of historical trends and only in the last few years has it begun to be used to forecast future modes of warfare. Against the modes of warfare expressed in fourth-epoch theory, the waves of war envisioned by the Tofflers appear as what they are—superficial “MTV clips.”²¹

The generations of modern war developed by Lind and his colleagues, on the other hand, hold up quite

well to the subepochs of this theory. The reason for this is that their generations approximate actual modes of warfare that have existed over the last few centuries.²² Given the governmental and military backgrounds of the developers of fourth-generation warfare theory, their accuracy is not at all surprising.

A further comparison of these theories can be made regarding their perception of the current RPMA now taking place (table 5). The fourth generationists originally viewed the current military revolution on a scale to that which took place back in the 1920s and 1930s with the development of armor, carrier aviation, and concepts of amphibious and strategic bombing operations.²³ Their theory cannot account for greater magnitudes of change because of its limited level of analysis. By linking it to the work of Dr Martin van Creveld, however, its authors now promote the perception that war will be waged outside of the nation-state framework and will possess nontrinitarian characteristics.

The Tofflers suggest that the current military revolution is equivalent in magnitude to that of the French Revolution. Besides change at the tactical and operational level, significant human civilization change is foreseen. Knowledge will become the new form of wealth, and, as a result, new economic, political, social, and military structures will develop. Because their abstract concepts have no basis in Western history, however, their “civilization waves” are flawed and therefore improperly articulate the historical process that is now taking place.²⁴

Fourth-epoch war theory recognizes that both tactical and operational change along with economic, political, social, and military structure change will take place. This theory, however, views the current military revolution as equivalent to that of the European Renaissance. Because of this perception, a shift in the energy foundation of Western civilization is foreseen along with an accompanying alteration in the nature of politico-military force and the deinstitutionalization of political violence (i.e., the loss of the nation-state’s monopoly on war). As a result, a corresponding rise in military entrepreneurs (e.g., terrorists, guerrilla groups, local warlords, private armies, drug cartels, and multinational corporations) engaged in warfare will take place, bringing into question the political legitimacy, and hence survival, of the nation-state during the next century.²⁵

Despite any flaws highlighted in these modal warfare and military revolution perceptual comparisons, the three dominant theories of future war highlighted in this article can each individually still provide a contribution to the emerging RPMA debate within the Air Force—although the contribution provided by the Tofflers will likely be far smaller than first envisioned. For these contributions to be fully understood, how-

Table 4
Subepochs, Waves, and Generations

SUBEPOCH (ENERGY SEQUENCE)	WAVES (MODE OF PRODUCTION)	GENERATION (TACTICAL BASIS)
Hellenic (Experimental Human)	First (Agricultural)	N/A
Roman (Institutionalized Human)	<i>Unexplained</i>	N/A
Raider (External Threat)	First (Agricultural)	N/A
Vassal (Experimental Animal)	First (Agricultural)	N/A
Feudal (Institutionalized Animal)	First (Agricultural)	N/A
Dynastic (Experimental Machine)	<i>Unexplained</i>	N/A
Absolutist (Institutionalized Machine)	<i>Unexplained</i>	First (Technology)
Corporate (Experimental Engine)	Second (Industrial)	Second (Technology)
Modern (Institutionalized Engine)	<i>Unexplained</i>	Third (Ideas)
Non-Western* (External Threat)	<i>Unexplained</i>	Fourth (Ideas)
Advanced Technology (Experimental Post-Engine)	Third (Knowledge)	Fourth (Technology)

*Formerly Terrorist/Low-Intensity Conflict

Table 5
RPMA Equivalence

FOURTH GENERATION	THIRD WAVE	FOURTH EPOCH
Change Equivalent to 1920s and 1930s	Change Equivalent to French Revolution	Change Equivalent to European Renaissance
Tactical/Operational Change	Tactical/Operational Change	Tactical/Operational Change
N/A	Economic, Political, Social, Military Change	Economic, Political, Social, Military Change
N/A	N/A	Energy Foundation Change Altered Nature of Politico-Military Force Deinstitutionalization of Political Violence Rise of Military Entrepreneurs

ever, the primary documents relating to each theory should be explored so that its potential benefit toward the development of post-Clausewitzian Air Force operational concepts and principles can be assessed.

Further, it is imperative that there be serious reflection and debate on the historical magnitude of the current military revolution now taking place. Failure to recognize the true magnitude of the change taking place will result in inaccurate assumptions being made when formulating strategic and operational concepts. As a prime case in point, we must now ask ourselves if war is still "a struggle between nation-states or their coalitions over the preservation and extension of national sovereignty" or if it is now rapidly shifting to "a struggle between competing forms of social and political organization over which the eventual successor to the nation-state will be built."

Notes

1. Col Owen E. Jensen, USAF, "Information Warfare: Principles of Third-Wave War," *Airpower Journal* 8, no. 4 (Winter 1994): 35–36.

2. Lesser-known theories include Russian "sixth-generation" warfare and the 10 military revolutions noted by Andrew F. Krepinevich. For more on these theories, see Mary C. Fitzgerald, "The Russian Military's Strategy for 'Sixth Generation' Warfare," *Orbis*, Summer 1994, 457–76; Andrew F. Krepinevich, "Cavalry to Computer: The Pattern of Military Revolutions," *The National Interest*, Fall 1994, 30–42.

3. I developed the RPMA concept because the earlier RMA debate ignored the massive political ramifications that the development of future warfare will have on our society and government. Military change as we are now witnessing does not take place in a political vacuum. To my surprise, Chuck de Caro, the theorist behind "SoftWar," had also mentioned in conversation at a December 1994 SO/LIC conference in Washington, D.C., the need for a new politico-military construct. My initial usage of the RPMA concept can be originally traced to my article "Rethinking OOTW" in the November–December 1995 issue of *Military Review*.

4. Colonel Jensen's initial step toward establishing principles of future war is laudable. This activity is being pursued in the other services, although at times not so openly, and hopefully will develop an interservice synergism as many of these concepts begin to be published. Unfortunately, the same process may also be beginning in the non-Western world. See Brig V. K. Nair, *War in the Gulf: Lessons for the Third World* (New Delhi: Lancer International, 1991).

5. The four were Col Keith M. Nightengale, USA; Capt John Schmitt, USMCR; Col Joseph W. Sutton, USA; and Lt Col Gary I. Wilson, USMCR.

6. Robert J. Bunker, "The Transition to Fourth Epoch War," *Marine Corps Gazette*, September 1994, 20–32; Lt Col Thomas X. Hammes, "The Evolution of War: The Fourth Generation," *Marine Corps Gazette*, September 1994, 35–

44; William S. Lind, Maj John Schmitt, USMCR, and Col Gary I. Wilson, USMCR, "Fourth Generation Warfare: Another Look," *Marine Corps Gazette*, December 1994, 34–37.

7. "The Changing Face of War: Into the Fourth Generation," *Military Review*, October 1989, 3.

8. Kenneth F. McKenzie, Jr., "Elegant Irrelevance: Fourth Generation Warfare," *Parameters* 23, no. 3 (Autumn 1993): 51–60.

9. Martin van Creveld and Maj Kenneth F. McKenzie, Jr., "Fourth Generation Gap?" *Parameters*, Winter 1993–1994, 109. For further commentary, see Robert T. Foley and Maj Kenneth F. McKenzie, Jr., "Clausewitz and 'Fourth Generation Warfare,'" *Parameters*, Spring 1994, 116–18.

10. Maj Mark H. Bean, "Fourth Generation Warfare?" *Marine Corps Gazette*, March 1995, 53–54; Col Michael D. Wyly, USMC, Retired, "Fourth Generation Warfare: What Does It Mean to Every Marine?" *Marine Corps Gazette*, March 1995, 55–58; Lt Col Charles A. Krohn, USA, Retired, "Other Responses to 'Fourth Generation.'" *Marine Corps Gazette*, March 1995, 59.

11. Alvin and Heidi Toffler, "A New Theory of Warfare: The 'Third Wave' Arrives," *Los Angeles Times*, 5 and 6 March 1991, B7.

12. I must agree with Steve Metz's observation that the Tofflers have not developed a true theory of war like Martin van Creveld in *The Transformation of War* (New York: Free Press, 1991). At best, they have developed a "concept of war." Steven Metz, "A Wake for Clausewitz: Toward a Philosophy of 21st-Century Warfare," *Parameters* 24, no. 4 (Winter 1994–95): 126–32. Because of the confusion that may exist, however, I will call it a theory when comparing it to the other two theories addressed in this essay.

13. Alvin and Heidi Toffler, *War and Anti-War: Survival at the Dawn of the 21st Century* (New York: Little, Brown and Co., 1993), 32.

14. The visionary Peter F. Drucker, arguably the most well known and respected futurist of our century, has written over 20 books on management, economics, politics, and society. His 1993 book *Post-Capitalist Society* is a far more tempered, scholarly, and less sensationalized account of the information revolution that is now taking place.

15. Col Richard M. Swain, USA, review of *War and Anti-War: Survival at the Dawn of the 21st Century*, by Alvin and Heidi Toffler, *Military Review*, February 1994, 77–78; Metz, 126–32; Robert J. Bunker, "The Tofflerian Paradox," *Military Review*, May–June 1995, 99–102.

16. T. Lindsay Moore, "The Structure of War," unpublished paper, The Claremont Graduate School, Claremont, Calif., 1989, 1–33.

17. Current research is addressing the rise of deinstitutionalized soldiers and their interaction with advanced technology and the emergence of new war-making entities.

18. The impact of this theory on the theoretical debate in the Marine Corps was important only when combined with the four editorials on future warfare written by Col John E. Greenwood, USMC, Retired, the editor of the *Marine Corps Gazette*, and the articles in the *Marine Corps Gazette* by Col

Thomas X. Hammes in the September 1994 issue and by William S. Lind, Maj John Schmitt, and Col Gary I. Wilson in the December 1994 issue. Research papers relating to this theory are now being forwarded to Marine Corps Combat Development Command (MCCDC) for evaluation.

19. See Bunker, "Rethinking OOTW"; Robert J. Bunker and T. Lindsay Moore, "Nonlethal Technology and Forth Epoch War: A New Paradigm of Politico-Military Force," Land Warfare Paper No. 23, Association of the United States Army, Institute of Land Warfare, Arlington, Va., February 1996; and Robert J. Bunker, "Advanced Battlespace and Cybermaneuver Concepts: Implications for Force XXI," *Parameters*, Autumn 1996 (forthcoming; originally prepared for TRADOC as National Security Studies Program [NSSP] Report 95-2, California State University, San Bernardino, California, July 1995).

20. Fred E. Perry et al., "The Future Revisited," *Marine Corps Gazette*, December 1994, 35-36.

21. Metz, 130-31.

22. Generations and the modern subepochs have many similarities. The major divergence is the fourth-generationistschool's nonacceptance of each mode of warfare as a synthesis of technology and ideas.

23. This is a perception also held by Andrew F. Krepinevich in his work.

24. Metz, 126-32; "The Tofflerian Paradox," *Military Review*, May-June 1995.

25. Mercenary dominance in Western warfare correlates during interepochal transitions such as the one we are now entering. These noninstitutionalized soldiers will represent one of the principal threats to our national security during the next century.

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